

PONTONIINE SHRIMPS FROM MORETON BAY, QUEENSLAND (CRUSTACEA:
DECAPODA: PONTONIINAE)

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Three recently collected new species of pontoniine shrimps from Moreton Bay, southern Queensland, are described and illustrated. *Periclimenes terangeri* was associated with an unidentified actinarian, while the hosts of *Onycocaris stradbrokei* and *Periclimenaeus myora*, probably a sponge and a tunicate respectively, were not identified. These additional species increase the pontoniine fauna known from Moreton Bay to about 20 species. □
Natantia, Pontoniinae, new species, Moreton Bay, Queensland.

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The pontoniine shrimp fauna of Moreton Bay, Queensland (Qld), is of particular interest as it is nearing the southern limit of the Indo-West Pacific zoogeographical region. The first species recorded, *Coralliocaris graminea*, *C. superba*, *Jocaste lucina*, *Periclimenes amymone* and *P. madreporae* (as *P. inornatus*), all associates of branching corals from Myora, were reported by Patton (1966). Since then a further 13 species only have been recorded in published literature, making a total of 20 species. This is in marked contrast with the fauna of Heron I., at the southern end of the Great Barrier Reef, some 480 km to the north, where the pontoniine fauna has received more intensive study and well over 100 species are known to occur. The discovery of three new species in Moreton Bay suggests that still further species may be expected to be present. A new species of *Pontonia* was also collected and will be described elsewhere. The type specimens are deposited in the collections of the Queensland Museum.

In the descriptions, carapace length refers to the postorbital carapace length (POCL).

SYSTEMATICS

Class CRUSTACEA

Order DECAPODA Latreille, 1803

Family PALAEMONIDAE Rafinesque, 1815

Sub-family PONTONIINAE Kingsley, 1878

Periclimenes terangeri sp. nov.

(Fig. 1)

ETYMOLOGY. Aboriginal, *terangeri*, Stradbroke Island.

MATERIAL. HOLOTYPE: QMW21735, 1 ovig. ♀; Polka Point, North Stradbroke I. Qld, 27°30'S

153°23'E, 0.5 m, coll. P. Davie and J. Short, 6 March 1996, in sea-grass. PARATYPE: QMW22275, 1 ovig. ♀ (dissected), same collection data as holotype.

DESCRIPTION. A small, slender *Periclimenes* species, of subcylindrical body form, generally similar to *P. toloensis* Bruce.

Adult female. Rostrum (Fig. 1A) slender, straight, slightly up-turned, c. $1.15 \times$ carapace length, slender, acuminate, reaching to slightly beyond end of antennular peduncle, with 9 acute evenly spaced dorsal teeth, 1st tooth epigastric, 2nd situated posterior to orbital margin, articulated, lateral carinae feebly developed, ventral carina obsolete, margin straight, with two small acute teeth on distal 3rd, with short plumose median setae proximally. Carapace smooth, glabrous, supraorbital spines absent, orbit feebly developed, inferior orbital angle strongly produced, distally blunt in lateral view, antennal spine well-developed, marginal, slightly exceeding inferior orbital angle, hepatic spine subequal to antennal spine, distinctly inferior to level of antennal spine, anterior to level of 1st dorsal rostral tooth, anterolateral angle of branchiostegite broadly rounded, not produced.

Abdomen as in *P. toloensis*, smooth, glabrous, 3rd tergite not posterodorsally produced, pleura broadly rounded, 6th segment c. $1.65 \times$ length of 5th, $1.9 \times$ longer than anterior depth, $0.75 \times$ carapace length, posteroventral angle bluntly produced, posterolateral angle acutely produced. Telson (Fig. 1N) c. $1.1 \times$ 6th segment length, $4.0 \times$ longer than anterior width, lateral margins straight, posteriorly convergent, with two pairs of well-developed dorsal spines, at c. 0.45, 0.65 of length, posterior margin c. 0.5 of anterior width,

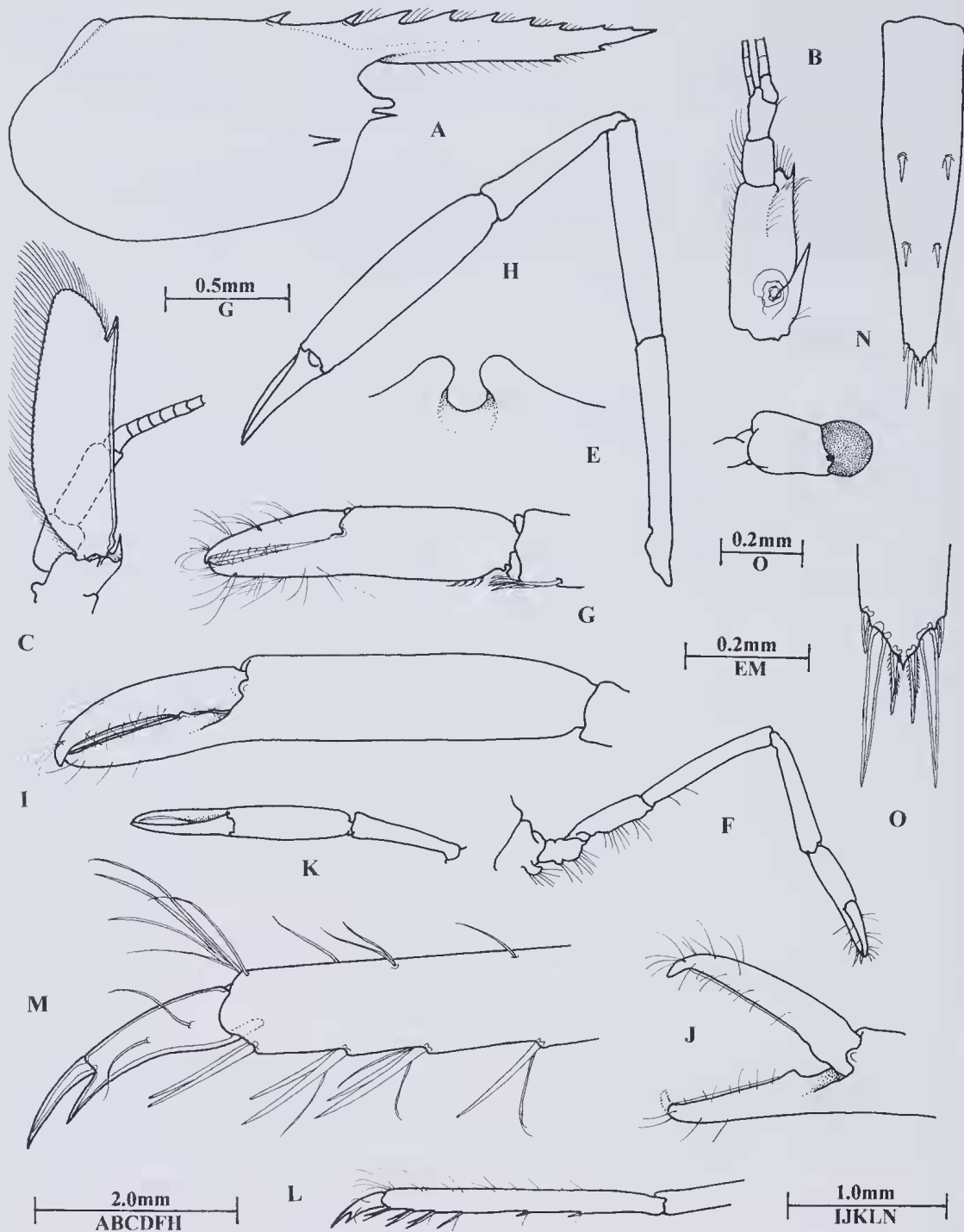


FIG. 1. *Periclimenes terangeri* sp. nov., ovigerous ♀ paratype (QMW22275), Polka Point, North Stradbroke I. A, carapace and rostrum, lateral. B, antennule. C, antenna. D, eye, dorsal. E, 4th thoracic sternite. F, 1st pereopod. G, same, chela. H, major 2nd pereopod. I, same, chela. J, same, fingers. K, minor 2nd pereopod, carpus and chela. L, 3rd pereopod, propod and dactyl. M, same, distal propod and dactyl. N, telson. O, same, posterior spines.

angular, with acute median point, lateral spines (Fig. 1O) subequal to dorsal spines, intermediate spines slender, c. 0.18 of telson length, submedian spines robust, setulose, c. 0.45 of intermediate spine length.

Antennular peduncle (Fig. 1B) normal, as in *P. toloensis*, proximal segment c. $2.2 \times$ longer than central width, with small acute ventromedial tooth, distolateral angle bluntly produced, with strong acute lateral tooth, extending well beyond distal margin of lobe, statocyst with irregular subcircular statolith, stylocerite slender, acute, reaching to c. 0.5 of segment length, intermediate and distal segments normal, combined lengths c. 0.7 of proximal segment length, upper flagellum with proximal 5 segments of rami fused, shorter free ramus with 5 segments, with 10 groups of aesthetascs, longer ramus and lower flagellum slender, filiform.

Antenna (Fig. 1C) as in *P. toloensis*, with basicerite with well-developed lateral tooth, carpopocerite not exceeding proximal segment of antennular peduncle, c. $2.8 \times$ longer than central width, reaching to c. 0.45 of scaphocerite length, flagellum well-developed; scaphocerite c. $3.3 \times$ longer than central width, lateral margin straight with strong distolateral tooth, lamella broad, scarcely tapering, distally bluntly angular, far exceeding distolateral tooth.

Eye (Fig. 1D) with large globular cornea, diameter c. 0.2 of carapace length, with dorsal accessory pigment spot, stalk c. $1.5 \times$ longer than wide, $1.5 \times$ longer than corneal diameter.

Mouthparts of normal *Periclimenes* form, without special features. Third maxilliped with vestigial arthrobranch. Fourth thoracic sternite (Fig. 1E) without median process, with low transverse lamina with subcircular median notch; 5th sternite similar, with u-shaped median notch.

First pereopods (Fig. 1F) slender, merus reaching to middle of carpopocerite, chela (Fig. 1G) to end of scaphocerite, with palm subcylindrical, c. $2.4 \times$ longer than deep, fingers slender, compressed, c. 0.8 of palm length, with small acute articulated tips, strongly hooked, cutting edges well-developed over distal half, entire, laterally situated; carpus c. $1.1 \times$ chela length, subcylindrical, c. $5.0 \times$ longer than distal width; merus distinctly longer than carpus, c. $1.2 \times$ chela length, uniform, $9.0 \times$ longer than central width; ischium c. 0.6 of merus length; basis normal; coxa with well-developed setose ventral lobe.

Second pereopods (Fig. 1H,K) dissimilar, unequal; major chela (Fig. 1I) c. 1.4 of carapace length, with palm subcylindrical, slightly compressed, smooth, c. $4.0 \times$ longer than central width, fingers (Fig. 1J) robust, c. 0.55 of palm length, dactyl c. $4.5 \times$ longer than deep, cutting edge unarmed, distal 2/3 of cutting edge lateral, entire, sharp, fixed finger similar, with single acute tooth proximally, cutting edge distally sharp, entire, tip missing; carpus c. 0.65 of palm length, $3.5 \times$ longer than distal width, tapering proximally, unarmed; merus longer than carpus, equal to 0.95 of palm length, 0.65 of chela length, unarmed, $7.0 \times$ longer than central width, subuniform: ischium c. $1.1 \times$ merus length, $10 \times$ longer than central width; basis and coxa without special features. Minor chela (Fig. 1K) c. 0.8 of carapace length, 0.65 of the major chela length; palm c. $3.5 \times$ longer than central width, subcylindrical, fingers c. 0.9 of palm length, more slender, proximal cuttings edge entire, tips acute, feebly hooked, carpus c. 0.95 of palm length, more slender; proximal segments similar to major chela.

Ambulatory pereopods slender; 3rd pereopod with dactyl (Fig. 1M) slender, c. 0.23 of propod length, simple, corpus c. $3.0 \times$ longer than proximal depth, compressed, tapering distally, dorsal margin convex, ventral margin sinuous, sharp, unguis distinctly demarcated, strong, curved, c. 0.65 of corpus length, deflexed; propod (Fig. 1L) c. 0.65 of carapace length, $12 \times$ longer than central depth, uniform, sparsely setose, distal 4th of ventral border with three pairs of long spines distally, c. $1.25 \times$ propod width, single similar spine proximally, proximal three quarters of ventral border with two short spines, carpus 0.5 of propod length, unarmed; merus 0.95 of propod length, unarmed; ischium 0.6 of propod length, unarmed, basis and coxa normal. Fourth and 5th pereopods similar to 3rd.

Uropod as in *P. toloensis*; protopod with small blunt distolateral lobe; exopod c. $3.0 \times$ longer than wide, lateral margin with slender acute distolateral tooth, with large mobile spine medially, dieresis feebly developed; endopod c. 0.9 of exopod length, c. $4.0 \times$ longer than wide.

MEASUREMENTS (mm). Holotype, QMW21735 ♀: carapace length, 2.4; carapace and rostrum, 4.9; total body length (approx.), 12.7; 2nd pereopod, major chela, 3.5; minor chela, 2.1; length of ovum, 0.5.

COLOURATION. No data.

HOST. Not recorded.

SYSTEMATIC POSITION. One of the *Periclimenes obscurus* species group, most closely related to *P. toloensis* Bruce, from which it may be distinguished by the following features:

1) more slender, acuminate rostrum, with two ventral teeth.

2) more elongate eyestalk, c. $1.5 \times$ longer than wide, compared with c. $1.0 \times$.

3) 4th thoracic sternite with transverse ridge with subcircular median notch.

4) 1st pereopod chela slightly shorter than carpus, distinctly shorter than merus, not longer than carpus.

5) propod of 3rd pereopod armed distally with 3 pairs of long slender spines, length exceeding distal propod width, and a single long ventral spine, more proximal spines short, not with shorter spines, with two distal pairs only.

6) dorsal telson spines subequal to lateral pair of posterior telson spines, not minute, much smaller than lateral posterior spines.

REMARKS. The holotype of *P. toloensis* was a ♂ from 10-30m off Ap Chau, Hong Kong, and was possibly associated with a gorgonian host (Bruce, 1969; 1982). The host has subsequently been identified as *Hicksonella princeps* Nutting, 1910 (Moreton & Harper, 1995). As the present specimens are both adult ♀♀, sexual dimorphism may account for some of the morphological differences. The holotype of *P. toloensis* had a POCL of 2.4 mm; it was therefore of similar size to *P. terangeri* (POCL 2.7mm) and probably also fully adult.

Periclimenes toloensis of Chace & Bruce (1993), from the Sulu Archipelago, from 38m, also an ovigerous ♀, is particularly similar to *P. terangeri* in that the dorsal telson spines are not minute but it has only a single ventral rostral tooth and the spinulation of the ambulatory propod resembles closely that of *P. toloensis*.

The specimens referred to *P. indicus* (Kemp, 1915), from intertidal anemones, *Macrodictyla aspera*, by Bruce (1983b) may also belong to the present species but are not available for re-examination. The species reported from Moreton Bay by Wadley (1978) as *Periclimenes (P.)* nr *obscurus* Kemp, 1922, may also belong to *P. terangeri*. Specimens provided by Dr Wadley have been examined but unfortunately no conclusions could be reached due to lack of many appendages.

***Onycocaris stradbrokei* sp.nov.**
(Figs 2-3)

ETYMOLOGY. From locality of capture, North Stradbroke I.

MATERIAL. HOLOTYPE: QMW21691, 1 ♀, stn QMP-6, Myora Reef, North Stradbroke I., Qld, 27°29'S. 153°25'E., 9m, on patch reef, coll. P. Davie and J. Short, 5 March 1996. ALLOTYPE: QMW22276 1 ♂, same collection data as holotype.

DESCRIPTION. Small shrimps of stout sub-cylindrical body form, generally similar to other *Onycocaris* species.

Female with rostrum (Fig. 2AB, 3A) short and broad, about as wide as long, reaching to level of anterior margins of eyes, unarmed, distally acute, slightly upturned, without distinct dorsal carina, lateral carinae expanded, ventral carina well-developed; orbital notch well marked, inferior orbital angle extracorneal, broadly acute; anterolateral branchiostegite broadly rounded.

Abdomen with pleura rounded, 6th segment with posterolateral angle acute, posteroventral angle larger, acute. Telson (Fig. 2J) $1.9 \times$ longer than broad, lateral margins convex, convergent, dorsal spines small, subequal, marginal, at 0.55 and 0.8 of telson length, posterior margin broadly convex, without median point, c. 0.25 of anterior width, posterior spines (Fig. 3F) short, small, lateral spines similar to dorsal spines, c. 0.45 of intermediate spine length, intermediate spines c. 0.1 of telson length, $5 \times$ than proximal width, with 3 submedian spines, feebly setulose, c. 0.6 of intermediate spine length.

Antennular peduncle (Fig. 2C) short, exceeding carpocerite and scaphocerite; proximal segment c. $2 \times$ as long as central width, with acute tooth distolaterally, without ventromedial tooth, stylocerite well-developed, acute, reaching to half segment length; intermediate and distal segments short and broad, combined length c. 0.55 of proximal segment length; upper flagellum short, feebly biramous, four proximal segments fused, distal part of 4th segment free, with 7 groups of aesthetascs, dorsal ramus with 7 slender free segments; lower flagellum short, with 12 slender segments

Antenna (Fig. 2D) with basicerite stout, laterally unarmed, with large protuberant process for antennal gland aperture; carpocerite well exceeding scaphocerite, c. $4.0 \times$ longer than central width, flagellum short, filiform; scaphocerite small, c. $2 \times$ as long as distal width, anterior margin broadly rounded, lateral margin straight

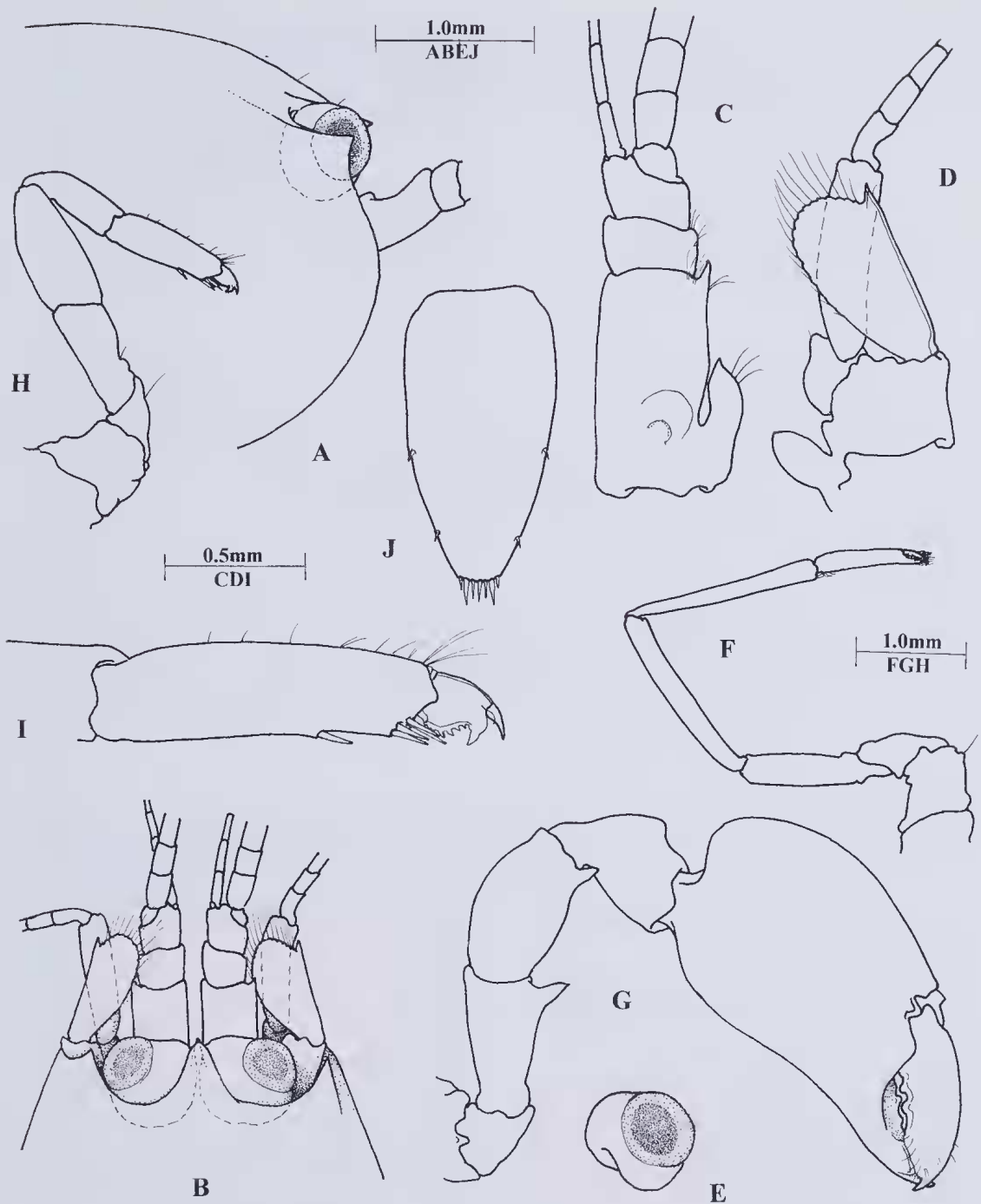


FIG. 2. *Onycocaris stradbrokei* sp. nov., ♀ holotype (QMW21691), Myora Reef, North Stradbroke I. A, anterior carapace, eye, and left antennular peduncle, lateral. B, anterior carapace, eyes and antennal peduncles, dorsal. C, antennular peduncle. D, antennal peduncle. E, eye, dorsal. F, 1st pereopod. G, major 2nd pereopod, lateral. H, 3rd pereopod. I, same, propod and dactylus. J, telson.

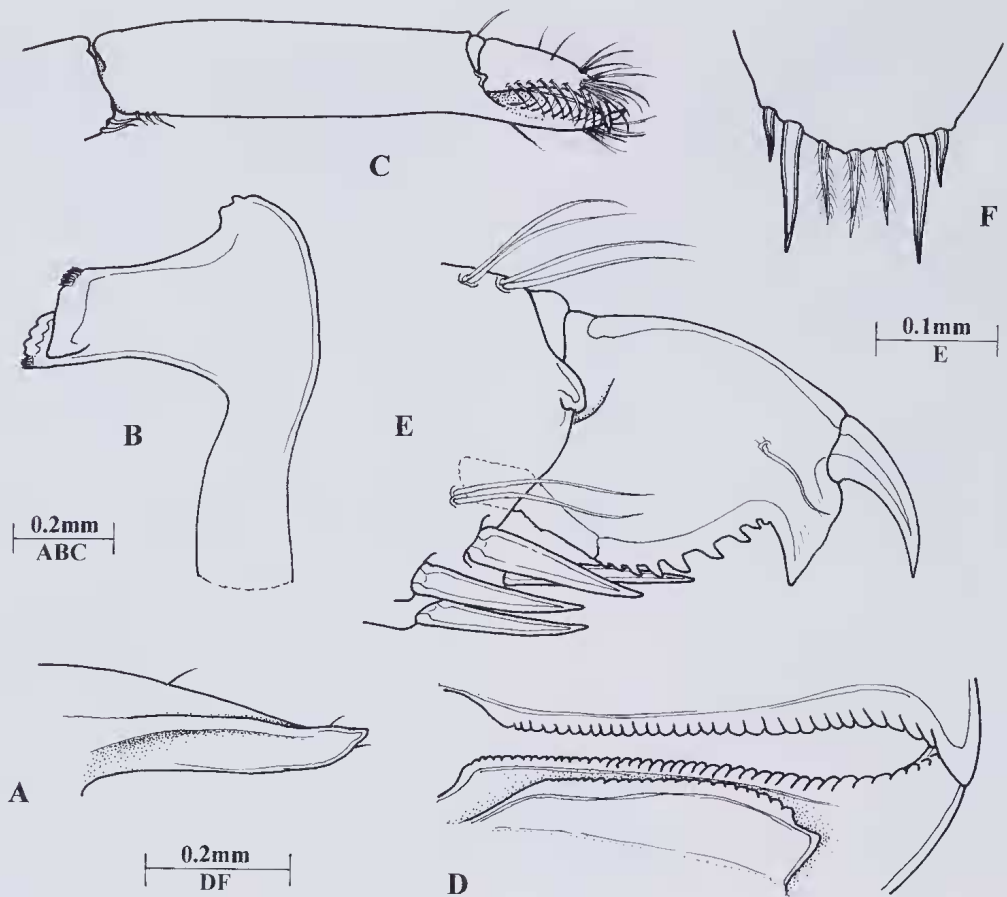


FIG. 3. *Onycocaris stradbrokei* sp. nov., ♀ holotype (QMW21691), Myora Reef, North Stradbroke I. A, rostrum, lateral. B, mandible. C, 1st pereiopod, chela. D, major 2nd pereiopod, distal cutting edges of fingers. E, 3rd pereiopod, distal propod and dactyl. F, telson, posterior spines.

with short stout distal tooth, not exceeding anterior margin of lamella.

Eyes (Fig. 2E) contiguous in midline, anterior margins subquadrate, with oblique hemispherical cornea, feebly pigmented, stalk short, globular, width c. 1.25 of corneal diameter.

Mandible (Fig. 3B) with slender corpus; molar process robust, distally obliquely truncate, feebly dentate, sparsely setose, incisor process strongly reduced, non-dentate. Posterior mouthparts present no special features. Thoracic sternites unarmed; very narrow, longitudinally carinate between 3rd pereiopods.

First pereiopod (Fig. 2F) long and slender, reaching beyond carapocrite by half merus, chela and carpus c. 0.65 of carapace length; chela (Fig. 3C) mooth, c. 4.0 × longer than central width, subcylindrical, slightly swollen centrally, fingers c. 0.35 of palm length, slender, very acutely

pointed distally, feebly subspatulate with entire medial cutting edges, with row of stiff setae along lateral edges; carpus slender, c. 1.75 × chela length, 9.0 × longer than distal width, tapering proximally; merus 1.8 × longer than chela, 8.0 × longer than central width; ischium 1.33 × chela length, 4.5 × longer than central width; basis c. 0.8 of chela length; basis stout, with small distoventral process.

Second pereiopods (Fig. 2G) well-developed, robust with large, stout, near subequal, vertically held chelae. Major 2nd pereiopod with chela c. 0.7 of carapace length, palm stout, smooth, compressed, broadly rounded posterodorsally, ventral border sinuous, c. 1.2 × longer than greatest depth, situated at c. 0.5 of length, tapering distally, dactylus c. 0.66 of palm length, 3.3 × longer than proximal depth, sparsely setose, with

strong acute tooth distally, medially concave with lateral cutting edge, proximal half with 2 small, low blunt teeth, distal half (Fig. 3D) convex with c. 30 small rounded teeth, size increasing slightly distally, fixed finger similar, with 3 small teeth proximally, c. 40 teeth (Fig. 3D) along distal cutting edge, slightly smaller than dactylar series, with well-developed submarginal flange distolaterally, with c. 23 small rounded marginal teeth and blunt distal angle, dactylar cutting edge closing into sulcus between flange and main cutting edge of fixed finger; carpus stout, c. $1.7 \times$ longer than greatest width, smooth, unarmed, distally broadened; merus stout, centrally swollen, without ventral tubercles, c. 0.6 of palm length, $1.8 \times$ longer than central width, with strong subacute distoventral tooth laterally; ischium slightly shorter than merus, tapering proximally, $2.0 \times$ longer than distal width, ventrally smooth, with very strong acute distoventral tooth laterally; basis and coxa robust, without special features. Minor 2nd pereopod similar to major; slightly smaller, chela c. 0.83 of carapace length, teeth along distal cutting edges of fingers slightly fewer and smaller.

Third pereopod (Fig. 2I) short, robust, extending beyond carapocrite by dactylus only; dactylus (Fig. 3E) strongly compressed, unguis distinct, acute, curved, c. 0.6 of dorsal corpus length, $2.5 \times$ longer than basal width, without ventral denticles, corpus c. $1.2 \times$ longer than greatest depth at 0.35 of length, dorsal and ventral borders strongly convex, ventral margin with large broad acute triangular distal tooth, with 8-9 small acute anteriorly inclined teeth proximally, central teeth larger than others; propod (Fig. 2I) c. 0.28 of carapace length, stout, $3.7 \times$ dactylar length, compressed, $3.7 \times$ longer than central depth, with 2 pairs of stout distoventral spines, single similar ventral spine at 0.6 of ventral length; carpus 0.75 of propod length, $2.8 \times$ longer than distal width, unarmed; merus $1.1 \times$ propod length, $2.6 \times$ longer than central width, unarmed, ischium subequal to propod length, $2.3 \times$ longer than distal width, unarmed; basis and coxa stout, without special features.

Uropods without special features.

Male generally similar to ♀, smaller and less robust, with relatively larger but similar chelae. Major chela c. $1.25 \times$ carapace length, minor chela subequal to carapace length; dentition of fingers similar, major chela with 4 small teeth proximally on fixed finger.

MEASUREMENTS (mm). Holotype, QMW21691 ♀, carapace length 4.25; total body length (approx.) 12, major chela, 3.85; minor chela 3.6. Male allotype, carapace length 2.8, total body length (approx.) 8.3, major chela 3.4, minor chela 2.8.

COLOURATION. Unknown.

HOST. Unidentified, presumably a sponge.

SYSTEMATIC POSITION. *Oncocaris stradbrokei* is most closely related to *O. bocki* Bruce, 1992, and may be distinguished by the following characters:

1) dactylar cutting edge of the major 2nd pereopod in *O. stradbrokei* has more numerous and distinctly smaller denticles than in *O. bocki*, of the same order of size as those on the fixed finger. In *O. bocki* there are less than 20 denticles, which are distinctly larger than those on the cutting edge of the fixed finger.

2) 3rd pereopod dactyl has more numerous ventral denticles (8-9), shorter, less erect, more inclined distally, the distal accessory tooth broader, more triangular, and with 2 pairs of stout distoventral propod spines, rather than 6 ventral denticles, a more slender based, trapezoidal accessory distal tooth, and a single pair of more slender distoventral spines with 3 ventral propod spines in *O. bocki*.

3) 1st pereopod is much more slender and elongate on *O. stradbrokei* than in *O. bocki*, with the carpus c. $1.75 \times$ the chela length as opposed to $1.4 \times$, propod $5.8 \times$ longer than central width, as opposed to $4.3 \times$ in *O. bocki*.

4) scaphocerite falling clearly short of distal end of antennular peduncle in *O. stradbrokei*, as opposed to subequal in *O. bocki*. Carapocrite markedly longer than scaphocerite in *O. stradbrokei*, shorter in *O. bocki*.

5) orbital notches deeper in *O. stradbrokei* than in *O. bocki*, so that tip of rostrum is level with anterior margins of eyestalks, with posterior part of eyestalk concealed. Eyes more fully exposed dorsally in *O. bocki*, (although this may possibly be due partly to post-mortem swelling).

REMARKS. *Oncocaris stradbrokei* is a member of the *O. aualitica* species group. This group has short toothless rostra and a strong distoventral tooth on the merus and ischium of the 2nd pereopods; it includes *O. aualitica* (Nobili, 1904), *O. amakusensis* Fujino & Miyake, 1969, *O. callyspongiae* Fujino & Miyake, 1969, and *O. oligodentata* Fujino & Miyake, 1969. *Oncocaris stradbrokei* and *O. bocki* may be distinguished

from other species by the non-denticulate ungues of the ambulatory dactyls. *Onyccaris audlitica* and *O. oligodentata* appear to be particularly closely related or are possibly synonymous. The species *O. amakusensis* and *O. oligodentata* have also been recorded from Australian waters.

***Periclimenaeus myora* sp. nov.**
(Figs 4-5)

ETYMOLOGY. From locality of capture, Myora Reef.

MATERIAL. HOLOTYPE: QMW21706, ovig. ♀, stn QMP-3, Myora Reef, North Stradbroke I., Qld, 27°29'S. 153°25'E., 3m, on patch reef, coll. P. Davie and J. Short, 5 March 1996.

DESCRIPTION. Small-sized pontonine shrimp of stout subcylindrical, slightly compressed body form.

Rostrum (Fig. 4ABC) slender, slightly depressed, short, c. 0.45 of carapace length, compressed without distinct lateral carinae, feebly up-curved, reaching to c. level of anterior corneal margins, falling well short of distal margin of proximal segment of antennular peduncle, dorsal margin with 3 acute teeth, 1st tooth well in advance of posterior orbital margin, shorter and stouter than two slender distal teeth, ventral margin convex, unarmed. Carapace smooth, depth subequal to length, without supraorbital spines or tubercles, antennal spine slender, acute, anterolateral angle of branchiostegite produced, rounded.

Abdomen without special features, stout, pleura 1-4 expanded, broadly rounded, pleuron 5 reduced, 6th segment broad, depressed, c. as long as anterior width, with posteroventral angles large, acute, posterolateral angles smaller. Telson (Fig. 4O) c. 2.0 × longer than 6th segment, 1.9 × longer than anterior width, lateral margins sublinear, posteriorly convergent, with two pairs of subequal, marginal dorsal spines, c. 0.07 of telson length, posterior margin c. 0.4 of anterior margin width, broadly convex, with three pairs of marginal spines (Fig. 5K), lateral spines robust, slightly smaller than dorsal spines, intermediate spines stout, 0.16 of telson length, 1.8 × lateral spine length, submedian spines slender, sparsely setulose, 1.2 × intermediate spine length.

Antennular peduncle (Fig. 4D) short, reaching to anterior margin of scaphocerite, proximal segment c. 2 × length of central width, with small distolateral tooth, without ventromedial tooth, stylocerite acute, 3.0 × longer than wide, reaching to c. 0.5 of segment length, statocyst normally developed, with granular statolith; intermediate and distal segments normal, combined length c.

0.6 of proximal segment length; upper flagellum with rami fused for three proximal segments, with 3rd segment partially free, with 8 groups of aesthetascs, longer free ramus with 6 segments, lower flagellum slender, short, with 9 segments.

Antenna (Fig. 4E) with stout unarmed basicerite, coxal region with protuberant antennal gland opening, carpocerite short, slender, c. 5.0 × longer than distal width, subcylindrical, slightly flattened, not exceeding anterior margin of scaphocerite, flagellum short, filiform; scaphocerite (Fig. 5B) small, reaching to end of antennular peduncle, distally broadened, 2.4 × longer than wide, lateral margin slightly convex, with small acute tooth distally at c. 0.8 of central length, anterior margin broadly rounded.

Eye (Fig. 4F) with well pigmented oblique, hemispherical cornea, diameter c. 0.2 of carapace length, without accessory pigment spot, stalk short stout, c. 1.3 × longer than wide, strongly flattened medially.

Mouthparts of normal *Periclimenaeus* form, without special features. Mandible with corpus slender, incisor process (Fig. 5A) not expanded distally, with 4 main teeth, most medial tooth with smaller accessory denticle medially, molar process slender, obliquely truncate distally with marginal fringe of short setae.

Thoracic sternites narrow, unarmed.

First pereopods (Fig. 4G) normal, not particularly slender, merus reaching beyond carpocerite by chela, carpus and distal 3rd of merus, chela (Fig. 4H) with palm subcylindrical, slightly compressed, 2 × as long as deep, fingers subequal to palm length, broad, blunt, spatulate, with minutely bidentate tips, distal cutting edges sharply carinate medially and laterally, entire; carpus subequal to chela length, 4.5 × longer than distal width, tapering proximally; merus c. 1.2 × carpus length, 5.0 × longer than central width, subcylindrical, feebly bowed and tapering distally; c. 0.6 of merus length; basis normal; coxa without ventral process.

Second pereopods (Fig. 4I) well-developed, unequal, dissimilar. Major chela (Fig. 4J) large, stout, c. 1.7 × carapace length, oval in section, not strongly compressed, 2.0 × longer than deep, tapering distally, smooth, glabrous, fingers c. 0.25 of palm length, sparsely setose, dactylus with dorsal margin semicircular, with stout acute tip, cutting edge with large molar process proximally, distally minutely serrate (Fig. 5C), fixed finger with large fossa proximally, distal cutting

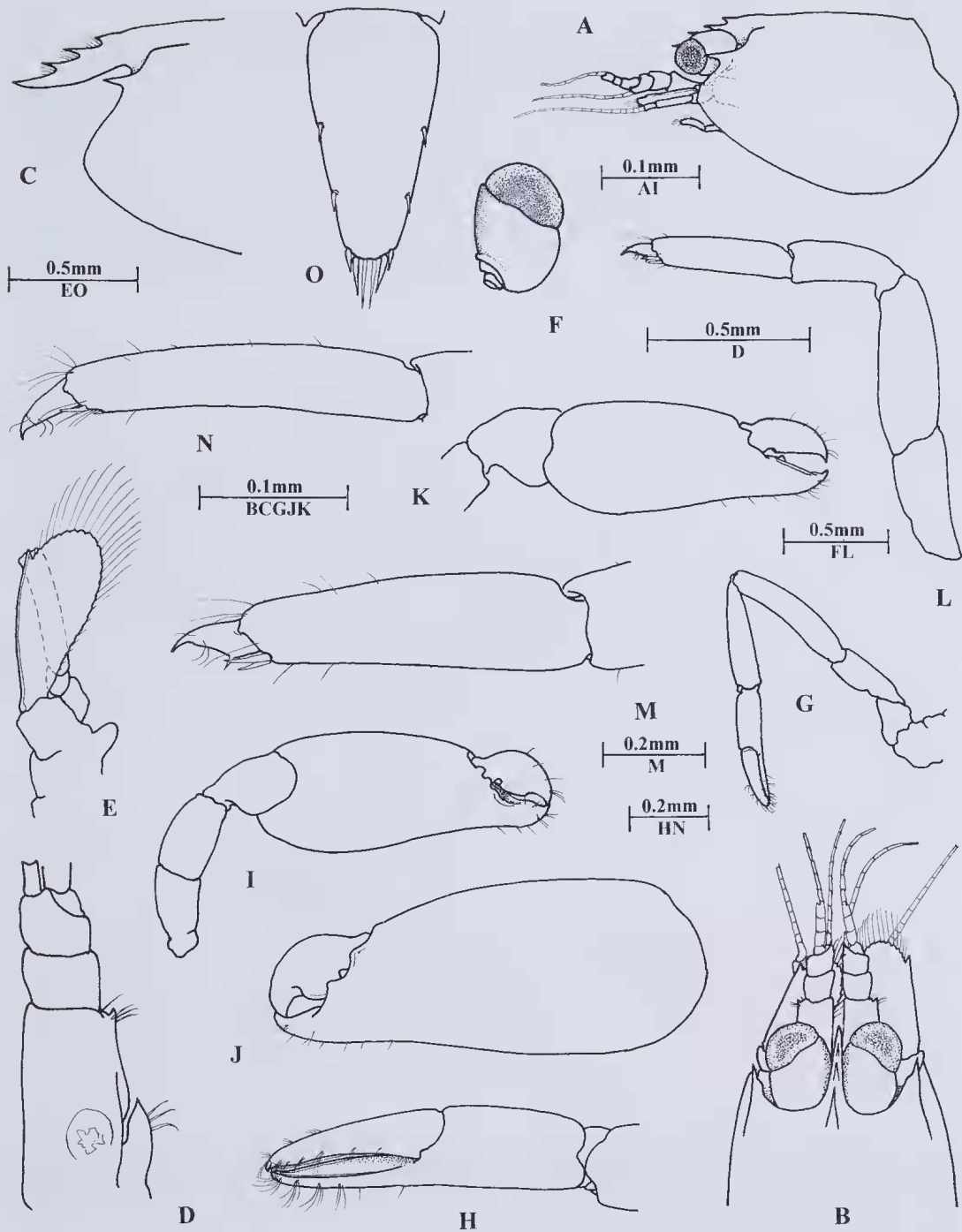


FIG. 4. *Periclimenaeus myora* sp. nov., ovigerous ♀ holotype (QMW21706), Myora Reef, North Stradbroke I. A, carapace and rostrum, eye and antennal peduncles, lateral. B, anterior carapace, eyes and antennal peduncles, dorsal. C, anterior carapace and rostrum, lateral. D, antennular peduncle. E, antennal peduncle. F, eye, dorsal. G, 1st pereopod. H, same, chela. I, major 2nd pereopod, medial. J, same, chela, lateral. K, minor 2nd pereopod, chela. L, 3rd pereopod. M, same, dactyl and propod. N, 5th pereopod, dactyl and propod. O, telson.

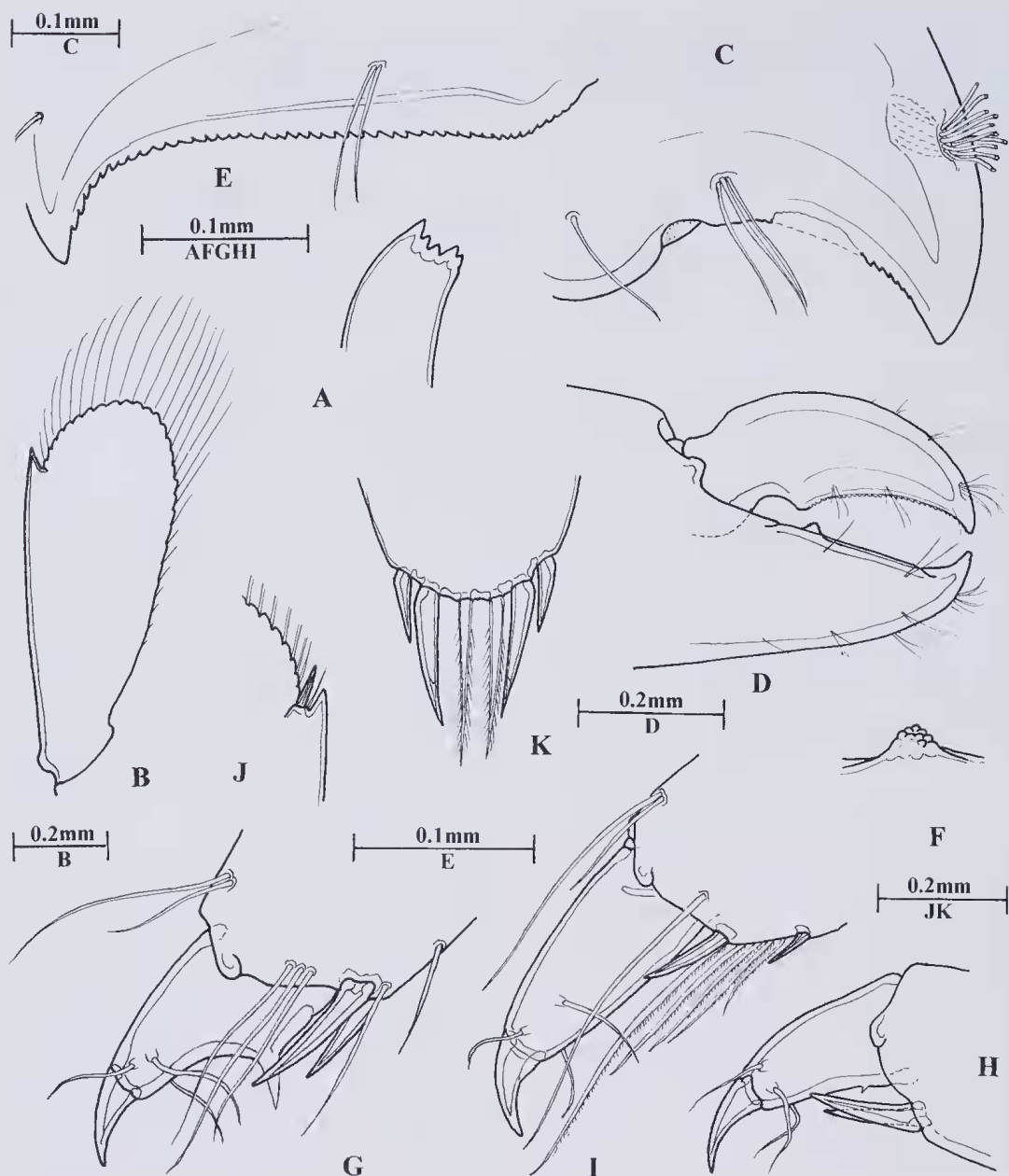


FIG. 5. *Periclimenaeus myora* sp. nov., ovigerous ♀ holotype (QMW21706), Myora Reef, North Stradbroke I. A, mandible, incisor process. B, scaphocerite. C, major 2nd pereiopod, distal dactylus. D, minor 2nd pereiopod, fingers. E, same, cutting edge of dactylus. F, same, fixed finger, cutting edge tooth. G, 3rd pereiopod, distal propod and dactylus. H, 4th pereiopod, same. I, 5th pereiopod, same. J, exopod of uropod, posterolateral angle. K, telson, posterior spines.

edge entire, tip stout, acute; carpus 0.33 of chela length, stout, distally expanded, unarmed; merus stout, 0.9 of carpus length, 1.6 × longer than central width, slightly expanded centrally, unarmed, ventral surface without tubercles or denti-

cles; ischium stout, subequal to carpus length, c. 2.0 × longer than distal width, tapering proximally, unarmed; basis and coxa stout, without special features. Minor chela (Fig. 4K) well-developed, stout, c. 0.66 of major chela length, 1.1

of carapace length, with palm strongly compressed, c. $1.8 \times$ longer than deep, smooth, sparsely setose, tapering slightly distally with fingers (Fig. 5D) curved medially, c. 0.4 of palm length, dactylus (Fig. 5E) $3.0 \times$ longer than deep, dorsal margin concave, cutting edge sublinear, with c. 40 minute, slightly recurved acute teeth, extending distally onto acute tip, fixed finger (Fig. 5F) with stout acute hooked tip, cutting edge straight, longitudinally cannulate, with entire edges, small tuberculate tooth proximally on medial edge; proximal segments as for major chela, smaller, less robust.

Ambulatory pereopods stout, 3rd (Fig. 4L) exceeding carpocerite by propod and dactylus (approx.), dactylus (Fig. 5G) 0.2 of propod length, distinctly longer than width of distal propod, unguis clearly demarcated, stout curved, c. $2.0 \times$ longer than basal width, unarmed, corpus c. $1.5 \times$ longer than basal width, compressed, tapering distally, with strong slender acute perpendicular tooth at 0.25 of ventral margin, distal ventral margin concave, 3 conspicuous sensory setae distally; propod (Fig. 4M) $3.6 \times$ longer than proximal width, tapering distally, sparsely setose, with pair of stout distoventral spines, lateral spine c. 0.15 of propod length, medial spine smaller, carpus c. 0.8 of propod length $2.7 \times$ longer than distal width, unarmed; merus c. $1.3 \times$ propod length, $3.0 \times$ longer than central width, unarmed; ischium 0.95 of propod length $2.5 \times$ longer than distal width, tapering proximally, unarmed; basis and coxa robust, without special features; 4th pereopod generally similar to 3rd, slightly more slender, dactylus (Fig. 5H) less deep proximally, ventral margin less concave with only minute proximal denticle, propod with pair of slightly unequal distoventral spines; 5th pereopod with dactylus (Fig. 5I) longer than in 3rd, c. 0.2 of propod length, corpus $2.0 \times$ longer than basal width, ventral margin feebly convex, unarmed; propod subequal to 3rd propod length, c. $5.5 \times$ longer than central width, with single distoventral spine and smaller preterminal spine.

Urpods without special features, protopodite distolaterally blunt, exopod (Fig. 5J) with lateral margin entire, unarmed, with small distal tooth and slender mobile spine medially.

MEASUREMENTS. (mm) ♀ holotype (QMW-21706), carapace length 1.8 total body length (approx.) 8.6; major chela, 3.1; minor chela 2.0, length of ovum, 0.55.

COLOURATION. Unknown.

HOST. Unidentified, presumably a tunicate.

SYSTEMATIC POSITION. *Periclimenaeus myora* is most closely related to *P. nobilii* Bruce, 1974, and may be distinguished by the following characters:

1) rostrum with 3 dorsal teeth in *P. myora* (only 2 in *P. nobilii*).

2) chela of the 1st pereopod is subequal to the carpus length (c. 0.8 of the carpus length in *P. nobilii*).

3) distal cutting edge of the major 2nd pereopod dactylus is minutely denticulate (entire in *P. nobilii*).

4) cutting edge of the minor 2nd pereopod dactylus is sublinear, with more uniform and numerous smaller teeth, about 40, (more sinuous with about 25 teeth, distinctly increasing in size distally in *P. nobilii*); chela ventrally glabrous (with numerous long setae in *P. nobilii*).

5) 3rd pereopod with dactylus 0.22 of propod lengthened much longer than distal propod depth (only $0.17 \times$ in *P. nobilii*) and subequal to distal propod width, ventral accessory tooth longer and more perpendicularly orientated; propod $3.6 \times$ longer than greatest depth (more swollen in *P. nobilii*, c. $3.0 \times$ longer than proximal width).

6) telson with dorsal spines marginal (subdorsal in *P. nobilii*), relatively smaller and shorter, c. 0.07 of the telson length (0.14 in *P. nobilii*), situated more posteriorly, anterior pair at c. 0.5 of telson length (0.3 in *P. nobilii*); lateral and intermediate posterior spines more robust, with more slender, longer submedian spines than in *P. nobilii*.

REMARKS. *Periclimenaeus nobilii* was described by Bruce (1974) on the basis of a single ♀ collected from an unrecorded locality in the Red Sea by Dr Félix-Pierre Jousseume in 1897, which had been examined by Nobili and identified as '? anomalie de *Coralliocaris hecate*' but not reported in published literature. There have been few subsequent reports. It is not certain whether the cutting edge of the fixed finger of the minor 2nd pereopod is longitudinally cannulate or not, but the illustration in Bruce (1974, fig. 14d) suggests that it may be. Two specimens from New Caledonia were referred to *P. nobilii* by Bruce (1991), but I am no longer convinced that these are conspecific and consider that two separate but closely related species are represented, both associated with related but different host tunicates. Differences, though small, are most marked in the ambulatory dactyls and propods. These two spe-

cies, together with *P. nobilii* and *P. myora* form a complex of closely related species probably all associated with related hosts of the tunicate family Didemnidae. *Periclimenaeus nobilii* has also been reported from La Réunion by Bruce (1983a) and the status of this specimen should be re-examined.

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- A new name, *Thinora*, an anagram, is now proposed to replace the invalid name *Thorina* Bruce, 1997. The type species of *Thorina* Bruce is *Thor maldivensis* Borradaile, 1915, by monotypy.

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